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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/005,846   | 12/03/2001  | Khuy V. Nguyen       | 2000.83             | 1022             |
| 29494  | 7590        | 04/21/2004           | EXAMINER            |                  |
| ROBERT H. HAMMER III, P.C.<br>3121 SPRINGBANK LANE<br>SUITE I<br>CHARLOTTE, NC 28226 |             |                      | CHANG, VICTOR S     |                  |
|  |             | ART UNIT             | PAPER NUMBER        |                  |
|  |             |                      | 1771                |                  |

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |  |  |
|------------------------------|------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>  |  |
|                              | 10/005,846             | NGUYEN ET AL.<br> |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>  |  |
|                              | Victor S Chang         | 1771   |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 February 2004.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

1. In view of the Appeal Brief filed on 2/24/2004, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Rejections not maintained are withdrawn.

***Response to Amendment***

4. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Callahan et al. (US 6602593) either individually, or in view of Best et al. (US 5635262).

Callahan's invention is directed to a split resistant microporous membrane for use in preparing a battery separator (Abstract). Suitable polymers include polyethylene, polypropylene, or a blend consisting essentially of polypropylene and/or polyethylene or

copolymers thereof. Polyethylene polymers such as linear low density or high density polyethylene having a molecular weight from about 100,000 to about 5,000,000 can be used (column 4, lines 37-39).

For claims 9-11, since ethylene-propylene copolymer (i.e., EPR) is inherently an elastomer, and it is known art that the mechanical property of a polyolefin can be improved by blending with a suitable amount of elastomer, as evidenced by Applicants' admission (Specification, page 3, top paragraph), the Examiner notes that Callahan's teachings clearly encompass the instantly claimed invention, i.e., a microporous membrane comprising a polyolefin/elastomer (EPR) blend, and having a Gurley value suitable for battery separator application. Although Callahan lacks a specific teaching about the weight percent of the elastomer in the polymer blend, it is noted that the scope of Callahan's invention is essentially the same as the instant invention, as such a suitable amount of elastomer is believed to be either implicitly disclosed by Callahan, or an obvious optimization to one of ordinary skill in the art of microporous membrane of polyolefin/elastomer blend. Alternatively, it is noted that Best's invention is directed to a blend of high density polyethylene and an elastomer such as EPR, EPDM, etc. in the amount of 1 to 15 wt%, and articles, such as films, bags, etc., made from the blend exhibit superior puncture propagation tear (split) resistance (Abstract). As such, in the absence of unexpected result, it would have been obvious to one of the ordinary skill in the art of polymer blend to modify Callahan's polyolefin/elastomer blend with 1-15 wt% elastomer such as EPR or EPDM, as taught by Best, motivated by the desire to improve the mechanical properties such as puncture and tear resistance, motivated by the

desire to obtain a microporous battery separator membrane with improved mechanical properties for battery assembly.

Method claims 1-3 and 6-8 essentially mirror the product claims 9-11 and employ only a conventional method step, i.e., providing. As such, they are also rejected as set forth above.

For claims 4 and 5, Callahan expressly teaches that preferably the microporous battery separator membrane has a Gurley value of from about 10 seconds to 60 seconds (column 2, lines 39-42).

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Victor S Chang*

Victor S Chang  
Examiner  
Art Unit 1771

4/5/2004

*Terrel Morris*

TERREL MORRIS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700